School Shop

vol. VIII no. 5

JANUARY, 1949

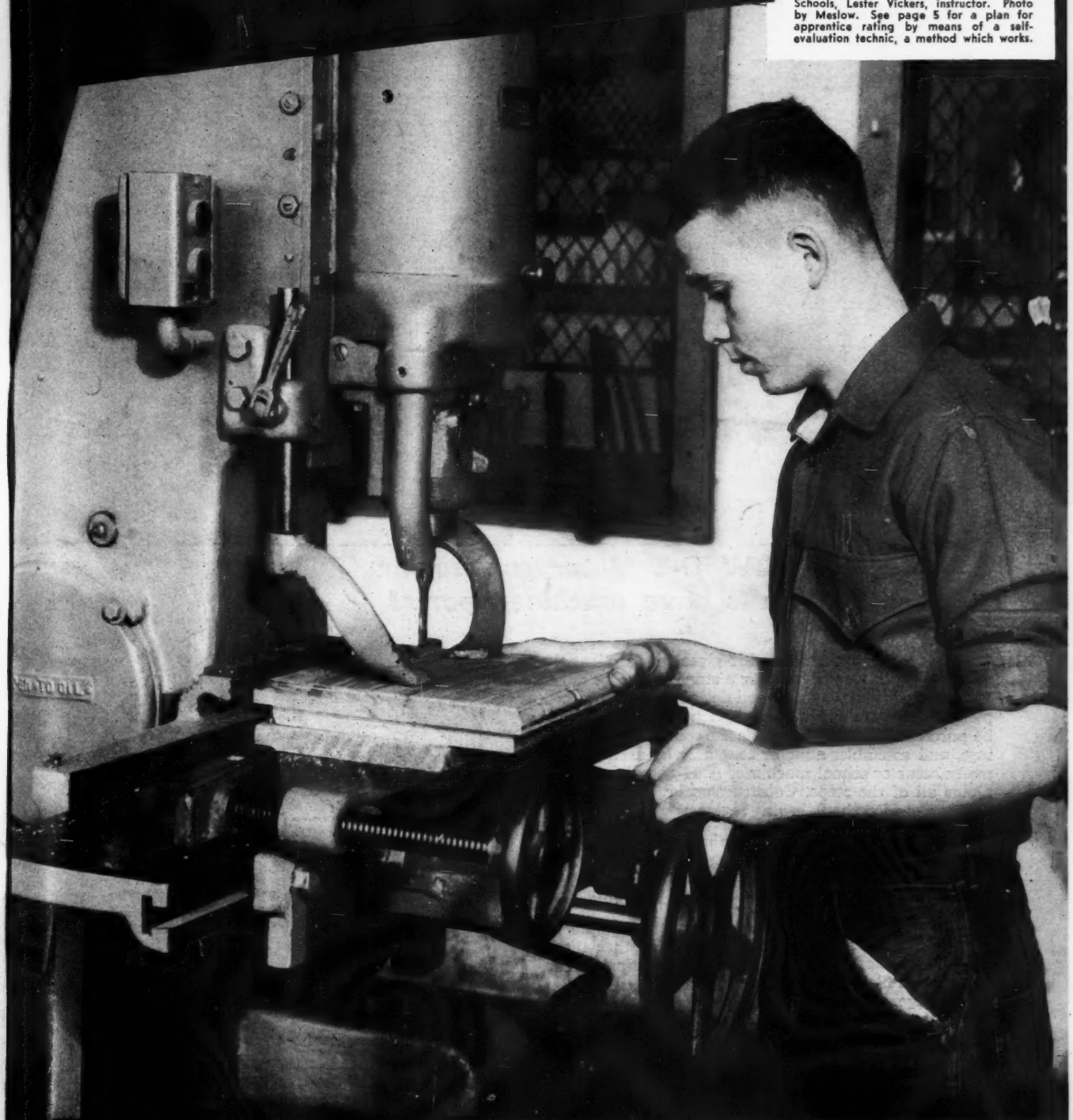
Apprentice Rating Simplified
by J. Douglas Wilson

Receiver Conversion for the Novice
by Wilcox and Crowe

Report from the Milwaukee AVA Convention

Carved Jewel Box
by S. S. Palestrant

On the cover: Student in the woodshop at Waukegan, Ill., Township Secondary Schools, Lester Vickers, instructor. Photo by Meslow. See page 5 for a plan for apprentice rating by means of a self-evaluation technic, a method which works.



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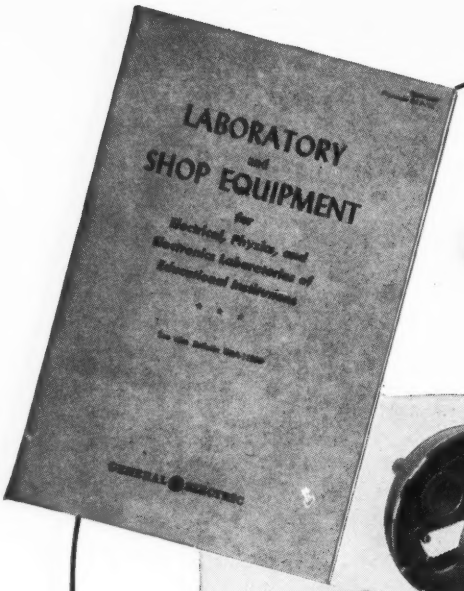

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The next issue will bring to you more interesting and worthwhile projects for improving shop teaching. We appreciate the many expressions of approval of SCHOOL SHOP's editorial content received at the AVA Convention in Milwaukee. In line with our continuing efforts to bring the reader a better magazine, we will continue to introduce new features. Your attention is invited to "Teaching Tools," which appeared last month for the first time and which is already one of the most popular SCHOOL SHOP features.

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School Shop

FOR INDUSTRIAL EDUCATION TEACHERS

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School Shop TALK

COMMENTS ON ISSUES FACING INDUSTRIAL EDUCATION

A New Tack

Humbly and respectfully (we hope) this observer would like to suggest a new tack for discussions on industrial-arts education. By "tack" we mean the nautical term of change of direction and not the short nail classified in the jargon of our profession as a "fastener."

Much of the earnest thought and most of the many well chosen words displayed at gatherings of confreres in industrial arts have to do with justifying it as a part of the over-all education program. Incessantly the idea is intoned that industrial arts is a member of the great happy educational family, that its objectives fit in with the objectives of general education like a dovetail joint, that, in short, industrial arts belongs.

All this is well and good. Industrial arts does belong. The evidence has been assembled and reassembled from commission reports, lists of objectives, scholarly conclaves, philosophic discourses.

The question now before the house is whether or not the time has come to cease the major emphasis on justifying the program as part of general education and go ahead with a clear conscience and a firm hand with the business of teaching industrial arts as a recognized member of the educational family.

The best defense is supposed to be a good offense. When we constantly seek to justify the educational objectives of industrial arts, there cannot help but be a feeling on the part of the administrators—the people who have to find the time in the busy curriculum for industrial arts—that here is a group that is on the defensive, that here is a place for minimum consideration.

Such a defensive mind-set on the part of industrial-arts people creates a handicap of no mean proportions. It plays right into the hands of those few diehards in general education who cannot see and thus do not know what industrial arts has to offer.

Objectives are important, of course. You cannot get anywhere worth going unless you know where you are headed. But perhaps the time has come to assume that we know that industrial arts is part of education and to act as though the assumption was clearly known to others in the field of general education.

Industrial arts has to fight for time in the curriculum, but so does many another subject. At the senior-high-school level a battle royal is in the making for determination of what shall constitute the curriculum or curriculums. A positive, nondefensive, quietly assertive stand backed by a demonstrably good program of industrial arts in operation can do wonders.

Let's take the offensive.

Students Speak

Out in Kansas where ideas seem to be boiling perennially, a coordinator has come up with the proposition that advisory committees are incomplete unless there is student representation. Accordingly, his committee includes members from the working group of students.

At present in the part-time program elsewhere everyone seems to get into the act except those most closely involved—the students. While their experience is limited in many ways, they nevertheless can contribute an important and oft-neglected viewpoint to committee sessions.

The SCHOOL SHOP chapeau is doffed to George Lyon of Goodland, Kansas, for recognizing this proposition and making democracy more meaningful for students.

Printing Curriculum Study

Joining forces, the Printing Industry of America, Inc., the Lithographic Technical Foundation, and the National Graphic Arts Education Association are beginning the task of assembling data so that several basic curriculums can be set up in graphic arts education.

We are particularly impressed by the fact that this is going to be a grassroots movement with participation by leaders in graphic arts education throughout the nation. Apparently no three-man committee is going to sit down and produce a curriculum for the rest of the nation to follow. Moreover, the dependency of printing on the sciences, mathematics, and English is also being considered.

Much good can come from this development which seems to be starting off on the right foot.

Your Editor

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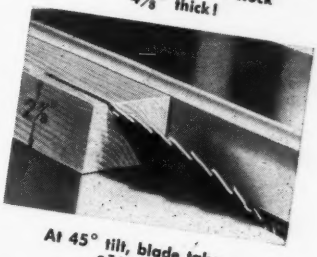

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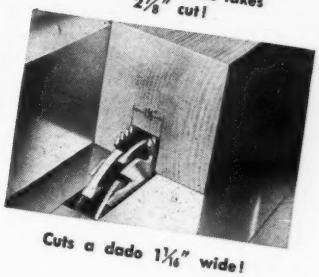

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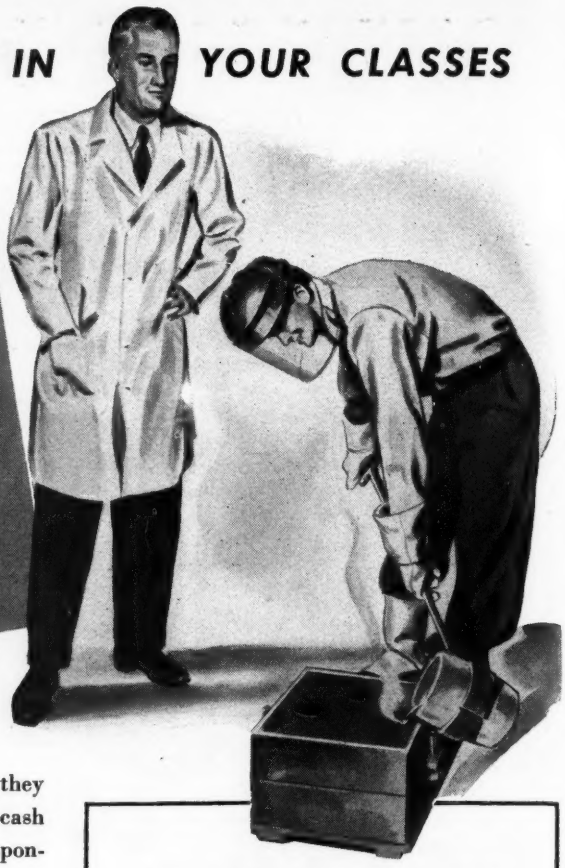

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Apprentice Rating Simplified with Selfevaluation Sheets

By J. Douglas Wilson

The selfrating method for placing the apprentice in his proper niche has been tried and proven, says the author. J. Douglas Wilson was Coordinator, Frank Wiggins Trade School, Los Angeles, California, when this was written. He is now a member of the administrative staff for vocational education in Los Angeles.

APPRENTICE training has been receiving a great deal of attention since the end of World War II because of the shortage of skilled craftsmen. Thousands of young men are being indentured to contractors or to joint apprenticeship committees. Many of these new workers had training in their chosen crafts prior to their entrance into Uncle Sam's armed forces. Others secured some basic trade experience during their enlistment period. Still others had received some trade training during their high-school days.

The question which must be settled for each and every apprentice is this: "In what period of his apprenticeship does he belong?" The answer to this question settles the wage question as most building trades apprentice plans call for at least eight periods of advancement or a total training program of four years. One or two trades call for a five-year training program.

How to Evaluate an Apprentice

There are several methods which can be used to determine the craft, skill, and technical knowledge of each apprentice. The best method, of course, would be to give him an actual performance and technical test. Because of the large number of apprentices to be checked, this procedure, for many of the larger cities at least, is impractical.

A second method would be to give each apprentice an oral examination. Again the time element must be considered as apprenticeship committees, all of whom have the responsibility to grade apprentices and recommend pay increases, would not be able to handle many apprentices during their committee meetings which usually occur only once a month.

A third method, which has been used very successfully, is to have each apprentice evaluate himself. On the basis of this evaluation, apprentices can be graded and a training program set up to meet the needs of each trainee.

The evaluation sheet illustrated is for the carpentry trade. Other trades have similar checkup sheets. These sheets have met the test through actual usage in the Los Angeles area and have proved their worth. In a brief time, an instructor can meet a new apprentice class and, through this selfevaluating procedure, definitely know the background and experience of each trainee in his class. If the group is a large one, he can divide the students according to their training needs. These sheets are presented to the apprenticeship committee for study and recommendation.

It should not be implied that the committee does not meet the apprentices. The method described shortens the interviewing process when the apprentice appears before the committee.

How to Develop an Evaluation Sheet

An apprentice evaluation sheet can be developed as follows:

1. List all the major jobs an apprentice must learn before he is qualified to be a journeyman or master craftsman. Trade advisory or apprenticeship committees are very helpful in making this

(*Continued on page* 12)

SELFEVALUATION SHEET

Carpentry Apprentice

Directions: Estimate your own ability and knowledge of each item by placing a small x in the proper column. Then connect each x with a continuous line.

UNITS	JOBS	EVALUATION OF YOUR ABILITY & KNOWLEDGE TO PERFORM THESE JOBS				
		None	Little	Ave'ge	Good	Exc'nt
CONCRETE WORK	Build straight concrete forms for columns and beams					
	Line up and brace concrete walls and col'ms					
	Build curved concrete forms					
	Set girders					
FRAMING	Set floor joists					
	Erect walls and partitions					
	Line up and brace framed walls and partitions					
	Cut rafters					
	Build staging					
EXTERIOR FINISH	Lay wood shingles and composition roofing					
	Cut and fit siding					
	Lay out window and door frames					
INTERIOR FINISH	Lay pine floors					
	Cut and fit mouldings					
	Set door jambs					
	Case openings					
	Fit and hang double-hung windows					
	Fit hardware and fastenings					
	Fit and hang doors and casement windows					
READING BLUE-PRINTS	Recognizing plan symbols					
	Reading					
	Plan views					
	Elevations					
	Sections					
	Details					

Receiver Conversion for the Novice

By Glade Wilcox and Dennis D. Crowe

The efficiency of instruction can be increased with the use of surplus equipment oftentimes as some of the more mechanical operations can be by-passed. Here is a description of conversion steps for two popular types of surplus receivers. Glade Wilcox and Dennis D. Crowe are members of the staff of Indiana State Teachers College, Terre Haute.

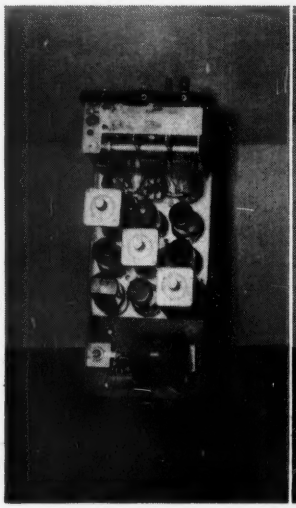


Figure 1—BC series receiver connected with a selenium rectifier power supply and a 50L6 output tube. The placement of parts is common in all of the receivers. The ganged tuning condensers are normally covered by a metal cover which was removed for the picture.

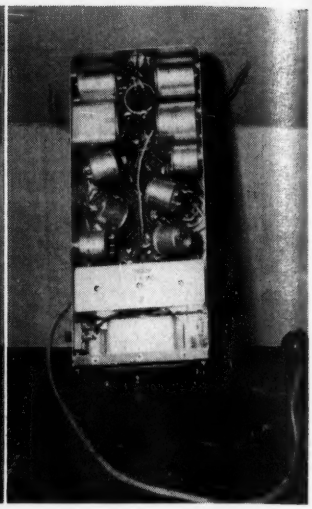


Figure 2—A bottom view of the same receiver with the can condensers loosened for rewiring the filaments. Care should be taken to insure that no parts are pushed out of place. The compact construction of this receiver is readily apparent.

BUILDING a receiver from scratch is not essential for the beginner in these days of surplus radio equipment. Many of the same technics can be learned in converting surplus equipment as in building a complete receiver and the mounting of parts and other nonradio operations are cut to a minimum.

The novice can convert most of the present available surplus receivers if he has adequate instructions. In most cases it results in more superior performance than he could get from his own construction. Of course the economy of surplus construction should not be overlooked.

One of the popular models of surplus equipment is the Command series. Both the Army SCR—274N, consisting of the BC 946, 453, 354, and 455, and the Navy CCT series can be converted by changing the filament wiring, replacing the dynamotor with a simple power supply, and by adding a volume control, CW-MCW switch, phone jack, and tuning control. All of the above are easily done by following the step-by-step operations as outlined below.

The Parts Needed

Command set receiver
50,000-ohm volume control and knob (midget volume control)
SPST toggle switch (small)
Adapter No. MC—211—A or other source of fluted tubing
Indicator light assembly such as a neon panel assembly
Old aluminum cake pan for small chassis
SPST toggle switch
20-20 filter condenser 150 volt
Power cord and plug
Mallory A-1 infant phone jack
50 Y6 tube
Octal socket
1500-ohm 5-watt resistor
200,000-ohm ½-watt resistor
Earphones or speaker with output transformer
Assortment of small machine screws

Converting the CCT 46145 to 110-Volt Operation

I. Mechanical Changes:

A. Front

1. Front socket:

a) Remove the entire front plate assembly.
b) Remove the aluminum can from the assembly.
c) Disconnect all wires and remove the socket from the front assembly. Replace the socket in the front of the receiver. It will be used to make connections later in the conversion.
d) Lay out and cut a new plate to fit the front opening.
e) Mount a 50,000-volume control in the center of the new plate and an SPST switch on one side of the volume control.

2. Tuning control:

a) Use adaptor No. MC-211-A.
b) Remove the cover plug from the adaptor.
c) Take out the set screw that retains the splined end.
d) Unscrew the splined end from the housing.
e) Drive out the pin which holds the small spur gear in place.
f) Saw off ¼" of the threaded guide and dress with a file.
g) Replace the spur gear as it was originally.
h) File off the teeth on the gear to make a ¼" shaft for a knob to fit.
i) Put a knob on the shaft and screw the connector on to the receiver.
j) If fluted tubing is used—insert in fluted shaft and screw on knob.

3. Indicator light:

a) Remove screws which hold the condenser in place immediately under the tuning control. *Do not disconnect wires.*
b) Drill *one* new hole and set the condenser up to make room under it.
c) Drill hole for the indicator light.
d) Fasten the light in place ready for connection.

Note: The hole must be as low as possible and as near the right side as possible to clear the front plate.

B. Dynamotor area:

1. Removing the dynamotor:

a) Slide back the clips and lift off the dynamotor.
b) Unscrew the four cushioned lugs.
c) With the pliers twist out the small top studs.
d) Remove wires from the plug and take out the plug.

2. Power-supply chassis:

a) Construct a small chassis which will fit on the dynamotor deck. Make the chassis about 1½" deep.
b) Drill a hole in one end for the power switch. An SPST toggle switch is easy to use for this application.
c) Make two holes in the top. One for an octal tube socket and one for the 20-20 filter condenser.
d) Drill a hole in the back for the power cord.
e) When these steps are finished and the parts mounted, the power supply is ready to wire.

C. Phone jack:

1. By moving one of the condensers on the right side of the chassis room will be made for a midget phone jack. The Mallory A-1 Infant Jack is adaptable for this purpose.

II. Electrical Changes:

A. In the receiver:

1. Front plate:

a) Connect a wire from pin 5 to the CW-MCW switch.
b) From pin 1 connect a wire to the volume control.
c) The volume control and the CW-MCW

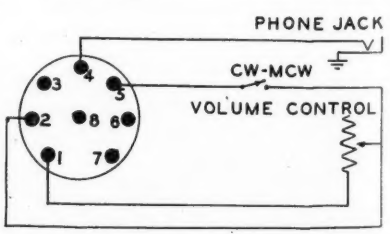


Fig. 3—Front Plug

switch are grounded to pin 2.

Note: The pins are counted from the inside of the chassis. Care must be taken to get the correct pin.

2. Phone jack:

a) Connect a wire from pin 4 to the insulated lug on the phone jack.

3. Filament circuit:

a) The filament pins are: 50Y6-2 and 7, 12A6-2 and 7, 12SR7-7 and 8, 12SK7-2 and 7, 12SK8-2 and 7.

b) Connect all of the filaments in series and extend a lead up through the hole where the dynamotor plug was to tie on to the 50Y6 filament.

c) Remove all wires from the filament pins which are not needed in the filament circuit, connecting the grounded leads to another ground connection.

d) The last tube is grounded to complete the circuit; the power is applied to the 50Y6 in the power supply first.

4. Speaker Output:

a) In addition to the phone output, this receiver can be matched to a 4" or 5" speaker.

b) Attach leads to either side of the neon by-pass which is located near the output transformer. Connect the wires to any two free terminals on the rear socket.

B. Power Supply:

1. One side of the power cord is grounded to the chassis; the other side goes through the switch to the nearest filament pin on the 50Y6.
2. The lead from the other filaments under the chassis is connected to the other filament pin.
3. From the same pin as was last connected to the filament circuit, put a jumper to pins 3 and 5 on the 50Y6. These are plate pins.
4. Connect the two cathodes from pins 8 and 4.
5. From pin 4 put a lead to one side of the filter.
6. Put a 1500-ohm resistor across the filter.
7. Connect the red wire which was removed from the dynamotor plug to the filter opposite to the input.

C. Indicator Light:

1. The neon light is connected through a 200,000-ohm resistor to the power switch.

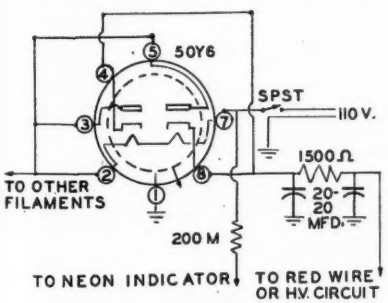


Fig. 4—Power Supply

These receivers can be converted for mobile operation by grounding one of the filament pins and paralleling all of the other pins, changing the tubes to the 6-volt equivalents and using a vibrator or 6-volt dynamotor supply.

One final precaution: only the BC 946 and the CCT 46145 cover the broadcast-band frequencies.

Report from Milwaukee

CONGRESS was asked to investigate the lack of support by the military of our education program in the occupied countries by the American Vocational Association meeting for its 42nd annual convention in Milwaukee November 30 to December 4. Other issues on which the meeting took a stand by the passage of resolutions were opposition to federal aid to education if the bill involved abolishing earmarked funds for such activities as vocational education, request for the full 29-million-dollar George-Barden appropriation, support of the Office of Education program for a Congressional appropriation for apprentice-training materials, interest in vocational education in foreign countries, opposition to Communism, commendation of the industrial-arts group for the activity resulting in the appointment of a specialist in the Office of Education, and establishment of a committee on building standards.

Upwards of 3000 attended the meetings which were held for the most part in the Milwaukee Auditorium and the Milwaukee Vocational School while the official registration figures were 2698.

New president of the AVA is E. L. Williams, Director, Industrial Extension Service, A. and M. College of Texas. The new vice-president for agricultural education is Louis M. Sasman, Chief of Agricultural Education, State Board for Vocational and Adult Education, Madison, Wis. Charles Sylvester, Assistant Superintendent of Schools for Vocational

(*Continued on page* 23)

Leaders (?) in Industrial-Arts Education

By Marcus Fitzgerald

Procrastinator Tom

"Says he hasn't been able to get in to see the principal yet. I've been in to see the principal four times myself since we first talked about it."

PROCASTINATOR Tom believes there is a whole day tomorrow that hasn't been touched—so why be in a hurry?

Tom is a constant "put-er-off-er." He sees many things to be done and has great ambitions but he never quite gets around to accomplishing his plans. In fact, Tom moves in haste only when an emergency arises and then only as far as the situation demands.

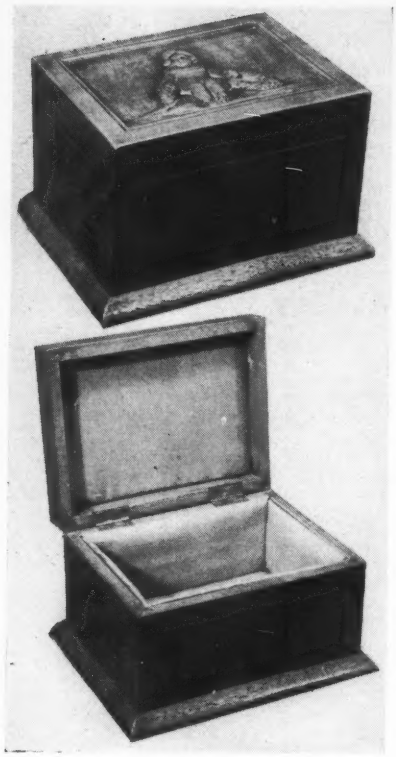
It isn't difficult for Tom to find justification for his lack of dynamics. For example, he doesn't want to take a certain action until he is sure of the principal-support which he has not as yet sought. Or, he hesitates to make a change in the shop program because different materials and machines would be needed and he feels confident they would not be forthcoming in the near future.

Tom considers himself a "safe" teacher because he is very contented with the status quo.

Progress in any field requires work—the application of energy. Procrastination normally originates in the desire to avoid work.

Beauty and Utility in Carved Jewel Box

By Simon S. Palestrant



Top—The box closed to show the carved figure on the lid.

Bottom—The jewel box open to reveal the hinges, jointing, and easily-made cushions for a lady's jewelry.

The carved lid on this jewel box adds an extra touch of craftsmanship and makes it much more attractive. Simon S. Palestrant teaches at the Roosevelt High School, New York, N. Y.

TESTED PROJECT

A PROJECT combining the esthetic with the practical is this jewel box with a carved lid. The student who undertakes to make one of these boxes will discover that there is a real joy of craftsmanship when the finished product has beauty of line as well as a high utility value. He will use a variety of woodworking tools and will meet a variety of specialized situations which require skill and patience. Also, it cannot be denied that the jewel box will find its way into the hands of someone he particularly desires to please. Jewel boxes are made for fine jewels and the lady who receives one is likely to show great appreciation.

The box illustrated should be made of some close-grained wood, such as holly. Corners should be mitred, glued, and pegged. Hinges for the lid are set in to make a blind fit.

Assembly Is Simple

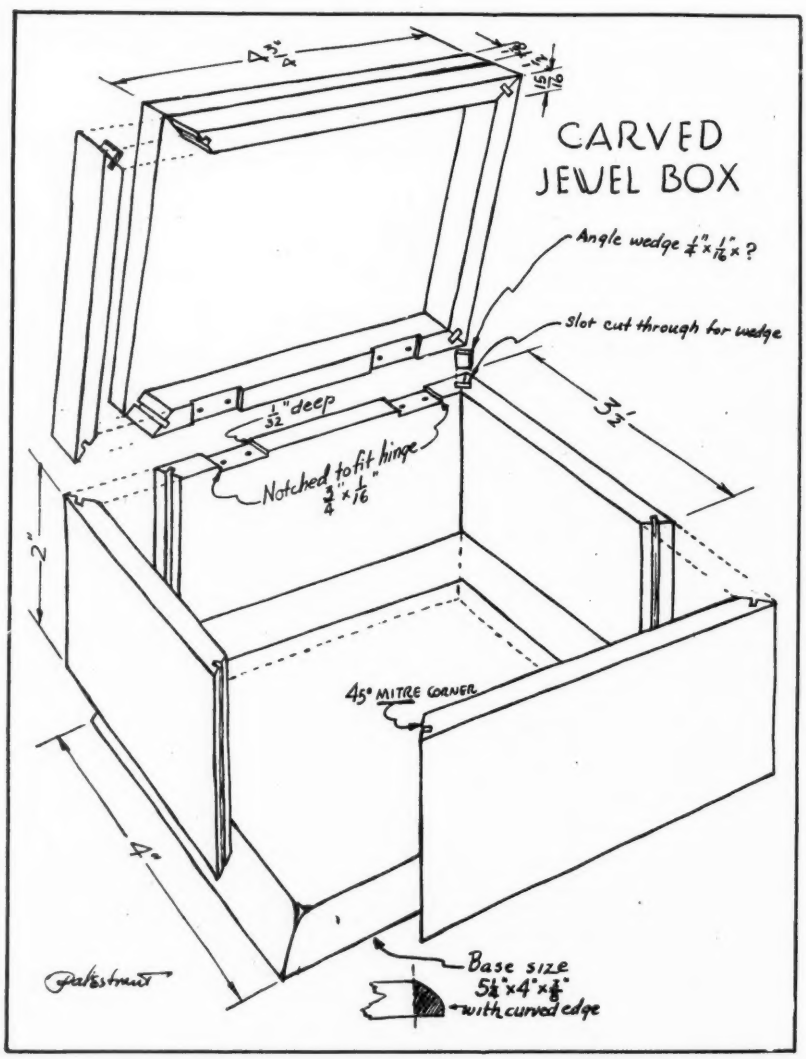
Assemble sides, front, and back, mitering the joints where indicated. Butt the top piece across one of the open ends. Glue all joints with hot glue, Weldwood, or a plastic resorcinal cement. The bottom pieces may be either spindle- or hand-carved to fit the open end, i. e., the bottom. Glue this in place.

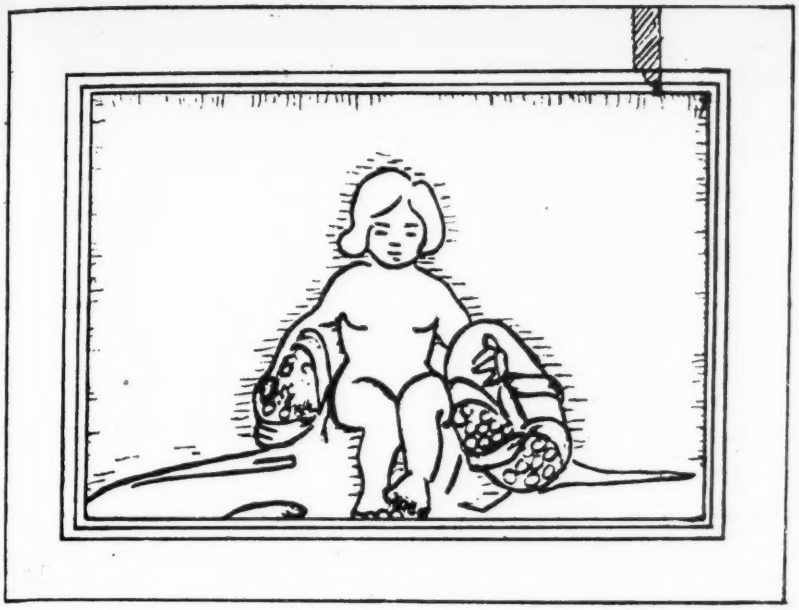
The box should be sanded throughout after it has been assembled. Saw through parallel to the top closed face, ¾" from it. Sawed edges should be sanded smooth and flat. Perfect fit is absolutely necessary here; check both pieces to insure this. Mortise a 1/16" slot across each mitred joint corner. Make it perpendicular to the mitred angle and extend it ⅛" into each half of the joint. In each slot fit tenon pegs, glue them, and, when the glue has hardened, sand the surface smooth again.

Wood should be cut out of the top and back pieces in order to make room for the hinges. The hinges should be screwed into place, ¾" from each end.

Figure Graces Lid

A figure on the lid of the jewel box will lend more beauty to the work and will provide an opportunity for the student with a more artistic inclination to test his skill. The pattern may be traced on the top of the box with a carbon, using the figure in the drawing or other





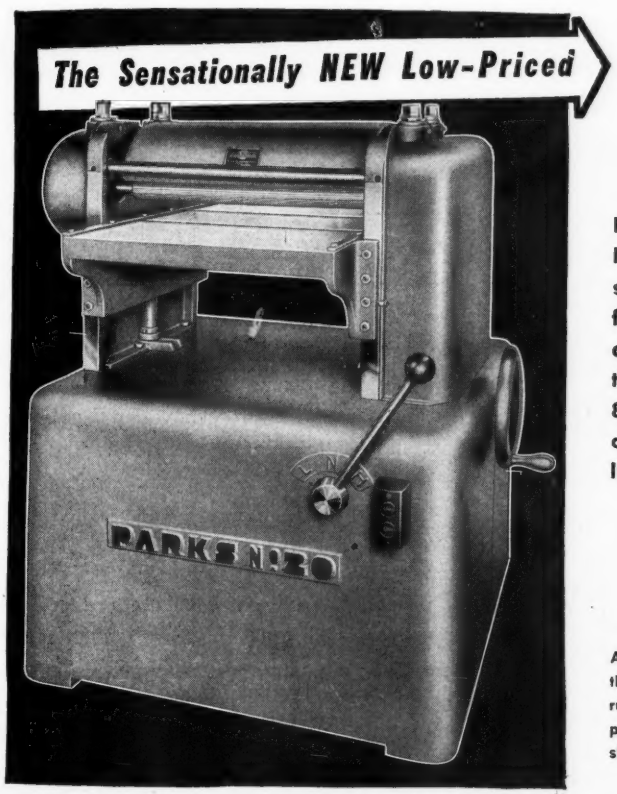
Drawing of the figure for the jewel box lid. May be traced for duplication on project plans.

designs. Outline the figure as well as the frame of the top moulding, if one is desired. Rout out the background, using a small "Vee" veiner, and smooth with a flat chisel. The routing should be ⅛" below the original surface. The figure should be blocked in with a skew chisel or with a chip-carving knife. Cut the major planes down to the proper levels. Use a small riffle file to finish up the more delicate modeling. It is advisable to follow up with a fine sandpapering to touch up all surfaces and to remove finger marks.

Oil stain of a fine middle tone is best for this jewel box. It will produce additional antiquing of the crevices, giving greater visual depth. The grain is an important beauty asset here, and the oil stain does not raise it as much as would a water or spirit stain. Use a darker shade of the same stain on the deeper parts of the box. The antiquing is heightened if the highlights are quickly rubbed.

Spray a thin coat of lacquer over the entire surface after it has dried. When the lacquer dries, a wax rubbed finish is suggested.

To create a soft resting place for the baubles for which the jewel box is intended use bright colored satin over cotton, glued to cardboard panels cut to size. Glue the cushions to the bottom, sides, and top in that order.



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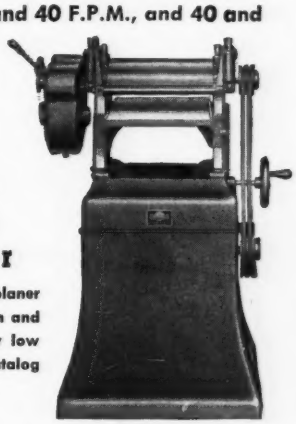

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NEWS

What's Doing in the Field of INDUSTRIAL EDUCATION

Industrial-Arts Conference

MEETING for the 35th time, the Industrial Arts Conference of the Mississippi Valley was held at the LaSalle Hotel in Chicago, Ill., November 11-13 under the chairmanship of President Verne C. Fryklund of The Stout Institute. Topics discussed included industrial arts in general education, the Prosser Resolution and industrial arts, comparative industrial education which covered the experiences of Professor Homer J. Smith of the University of Minnesota while in Germany and of Dr. Fryklund while in Japan, elementary industrial arts, and graduate programs and problems. New members of the conference are Raymond Larsen, State Teachers College, St. Cloud, Minn.; John Feirer, Western Michigan College, Kalamazoo; John A. Fuzak, Michigan State College, East Lansing; H. L. Oakley, Murray, Ky., State College; and Lawrence W. Prakken, Editor, SCHOOL SHOP, Ann Arbor, Mich.

Iota Lambda Sigma Officers

AT the meeting of Iota Lambda Sigma, professional fraternity of industrial-education teachers, held at Milwaukee on December 2, Joseph R. Strobel of Columbus, Ohio, was elected president. Other officers are: vice-president, Glen Smith, Stillwater, Okla.; secretary, Clyde H. Wilson, Knoxville, Tenn.; and historian, George H. Resides, State College, Pa. H. F. Hinton, Tallahassee, Fla., was named chairman of the advisory council and Hugh Judge, Pittsburgh, Pa., vice-chairman.

Penn State Conference

THE First Annual Conference on Industrial Arts and Vocational Industrial Education was held on October 30, 1948, at Pennsylvania State College for teachers of industrial education, coordinators, supervisors, principals, and superintendents. Two sectional meetings were held, one on industrial-arts education and one on vocational industrial education. A combined session for summarizing the section meetings was held at a noon luncheon. Talks were given by various superintendents, state and local officials, and staff members of the college.

New Council Proposed

A MEETING was held recently at Columbus, Ohio, to consider plans for an Ohio Council of Local Administrators of Vocational Education and Practical and Industrial Arts. A constitution was drawn up for submission to interested persons in the state. The objective of the group is to discuss problems regarding the development and progress of vocational education and industrial or practical arts with membership open to administrators or supervisors and teacher trainers in the field. The project grew out of discussions held at the Trades and Industries Workshop at Ohio State University this summer.

Kansas Associations Meet

AT the meetings of the Kansas Vocational Association and the Kansas Industrial Education Association held in Topeka in November new officers were chosen. The new president of the Kansas Vocational Association is W. F. Currier, Director of Vocational Education, McFarland Trade School, Coffeyville. Vice-president for trade and industrial education is Loren M. Nuzman, Topeka High School, who is also the new president of the Kansas Industrial Education Association. R. R. Reed of Salina is vice-president, and K. R. Powers of Topeka is secretary-treasurer.

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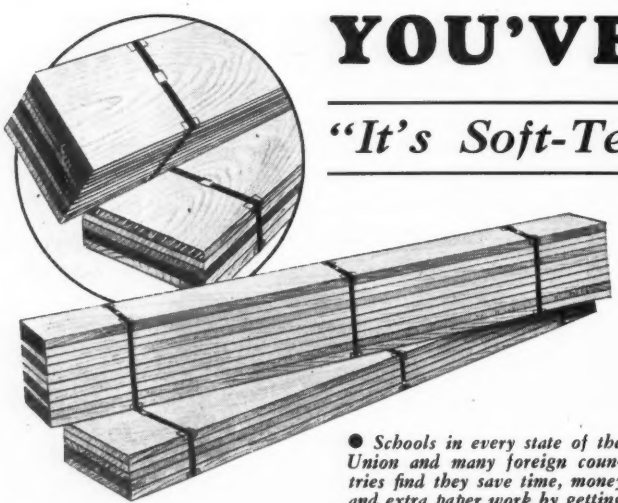

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Teaching Tools

POINTERS ON INSTRUCTION and SHOP ADMINISTRATION

By John F. Nowak

Small Tools and Usable Supplies

SUPERVISORS of shopwork and principals sometimes employ a series of stock questions which they draw on and use during school shop visits. The entire storehouse of questions, however, is not usually exhausted on a single teacher. One question which they will invariably ask each shop teacher visited is, "How are you fixed for small tools and usable supplies?"

More often than not the shop teacher's reply to the question will be to the effect that both are inadequate. From this point on, responsibility must rest somewhere. The supervisor or principal will probably pursue a line of questioning somewhat similar to the following:

1. "When was your last requisitioning date?"

The teacher should know the exact date without referral to the requisitions in question. If he does not know, then point number one to remember is, *memorize that date.*

2. "What was the total sum allocated to this shop for small tools and usable supplies at the time of your last requisitioning?"

Not only should the teacher be able to tell the last requisitioning date without hesitation, but also what sum he was allotted when ordering. Point number two, then, is *to know the total sum allowed the activity for small tools and usable supplies at the last requisitioning period.*

3. "Let me see your requisitions."

If the teacher cannot produce a file copy of his last requisitions, the situation may be embarrassing (for the teacher). Point number three: *make and keep a file copy of every requisition.*

Points to be remembered in ordering so that delay will be avoided are:

1. A clear description of each item ordered so the vendor will know what to bid on.

2. The unit of measure should be a standard one, known to all concerned.

3. Use manufacturer's catalog when ordering and give page and number for each item ordered.

The teacher should ask himself if he ordered at the last opportunity, if he ordered his full allotment, if he ordered intelligently, and if he has a file copy of each requisition in his records. If the answer is in the affirmative for all four, he need have no fear of the charge of negligence on his part.

Questions and Answers

Q. Is a written lesson plan necessary for every formal lesson? (W. H.)

A. Yes, for two important reasons: (1) to insure a thought-out presentation by the teacher, and (2) to permit examination by a supervisor for evaluation or assistance.

Q. What is the objection to a voice roll-call? (G. C.)

A. A voice roll-call wastes time. Substitutes are: (1) an in-and-out board using metal tags, discs, cards, etc., (2) a sign-in sheet, (3) assigned work stations, and (4) memorizing names and faces.

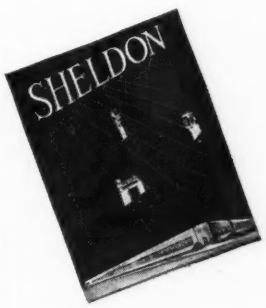
Q. What is a reasonable time for a shop clean up? (P. F.)

A. Instruction should continue in shopwork until approximately 10 minutes before dismissal time. This is considered a reasonable allowance in most shops.

Question Box

As a complement to this department, readers are invited to send in questions which relate to methods of teaching shopwork. If a personal reply is desired, include a stamped, selfaddressed envelope. Send questions to:

John F. Nowak
P. O. Box 869
Church Street Station
New York 8, N. Y.



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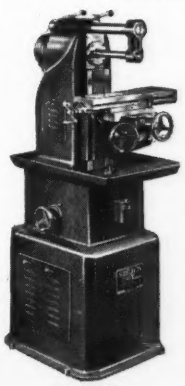

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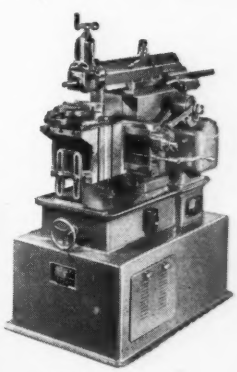


No. 8000 12" Shaper

IN THE Morning Mail . .

[Brief comments about SCHOOL SHOP and the field it serves are invited. Address the Editor, SCHOOL SHOP, Ann Arbor, Michigan.

Gentlemen:

Tsk, tsk, Mr. Fitzgerald, so you think it is "a lack of understanding of pupil growth and development" which makes your "Defensive Pete" behave as you say he does? As simple as that! You should know better, Mr. Fitzgerald. [EDITOR'S NOTE: See cartoon on page 28, November SCHOOL SHOP about Defensive Pete who gets low IQ kids, "feels his opinions don't count, his equipment is inadequate, that materials are not available."]

What would you do in his place, pray tell us, if you had a class of 20 in woodshop, with IQ's ranging from 50 to 70? Or if you had them in the printshop, autoshop, electric shop, or even in drafting? Would you feel quite safe if you, by chance, turned your back for a moment that a serious accident might not befall some member of your class, or some expensive machinery or tool be damaged or ruined?

That is the situation often confronting your "Defensive Pete." Who is responsible? Generally, the taxpayers who fail to provide adequate funds to take care of low IQ's as they should and could be cared for. If "Defensive Pete's" class was cut down to 10, with eyes all the way round his head, he might be able to watch them and guard them from harm. Teach them? That is another matter. . . .

In the meantime, however, does it not seem unfair to you, Mr. Fitzgerald, to force pupils to do poor and failing work in subjects in which they have no interest, in which no human being can interest them, and for which they have not the slightest inclination and aptitude? Even if the subject happens to be a shop subject!

Handicapped from the start, they are further stigmatized by failure and frustration, and retarded from the acquisition of some type of skill from which they might later be able to earn a decent livelihood. Dumping low IQ pupils on the shop is an age-old custom. The feeling is that if a boy is not bright enough to be made into a dentist, he can be made into a carpenter. They (those who do the dumping) forget that the dentist is a mechanic also—a tooth carpenter. The doctor? Well, we have friends among the members of the profession, and hate to say!

At any rate, no permanent good to the pupil can result from making poor "Defensive Pete" wear himself out trying to sell himself and his shop to pupils who are not in the market to buy.

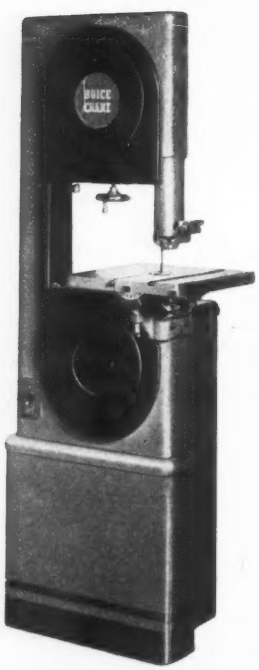
We do not pretend to know a thing about it, but it must be obvious that there are many useful jobs which your so-called low IQ's could fill satisfactorily and yet maintain a selfrespecting and happy life. . . . There is little excuse nowadays for large school systems not making some effort by means of special classes to help these handicapped young people in finding themselves and happiness. . . . A program along the lines of guidance, development, and follow-up would definitely cut down juvenile delinquency and, possibly, save many a youngster from a potentially criminal career. . . .

So, Mr. Fitzgerald, don't blame Pete too much. He has his hands full with pupils of even average intelligence—if he tries to do a conscientious job. A pat on the back would be more appropriate than a kick in the pants to help him overcome the feeling of futility and frustration which must be his lot. If he mumbles something about silk purses and sows' ears, it is a sign that he is trying to do a faithful job. Otherwise, he'd mumble "to heck with it all."

August Flam
John Marshall High School
Los Angeles, Calif.

SMOOTHER FASTER CUTTING

BOICE-CRANE 14" BAND SAW



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Apprentice . . .

from page 5

list. It is suggested that two lists be made—one each for manipulative and technical attainments.

2. Write out the list in logical order. This may follow the constructional order of building, for example, or of learning topics, such as blueprint reading, layout, estimating, etc.

3. Make five vertical columns at the right-hand edge of the sheet, heading each respectively, *Excellent*, *Good*, *Average*, *Little* or *None*. These terms should be described on the sheet of instructions. The following is a suggested set of definitions for the five grading terms:

Excellent—Can do a first-class job of craftsmanship in less than the average time and without supervision.

Good—Can do the job in a satisfactory manner but needs some supervision.

Average—Can do a passable job but needs constant supervision.

Little—Has had little experience doing the job.

None—Has never done the job and is completely uninformed as to how to perform it.

How to Use an Evaluation Sheet

The evaluation sheets are not difficult to use. Give a copy to each apprentice, explaining carefully the nature of the sheet, its purpose and value *to him*, and how to mark it. The marking can be done by placing a dot in the proper column to indicate the estimated evaluation for each job. Then connect each dot and a profile will result.

A study of this line indicates the units or jobs in which the apprentice considers himself to be weak or as having no experience. The instructor should, if possible, provide instruction for these units. After a period of, say, six months, another evaluation should be made, using the same sheet but a pencil of a different color from the initial test. Comparison of the two profiles will enable the instructor to determine the growth of the apprentice's abilities.

If the instructor doubts the apprentice's evaluation he can give him an examination on the unit which is questioned and convince either himself or the apprentice as to the accuracy of the original rating. The training program for this apprentice should then be adjusted accordingly.

How the Apprentice Profits by the Evaluation Sheet

The evaluation sheet has definite values for the apprentice. He can see, through carefully studying the various topics or units of work listed, the scope and content of the trade he is learning. Second, he will know, at the start of his training period, what units of work will have to be mastered before he can qualify as a master craftsman. Third, he will have visible evidence of his growth as an apprentice as each evaluation is made.

Summary

The evaluation procedure has a number of definite values as follows:

1. It gives a complete overview of the trade in terms of learning units.

2. It gives industry additional confidence in the school's ability to deliver on apprenticeship training.

3. Apprentices can be intelligently classified as to their immediate status in terms of trade skills and technical knowledge.

4. Apprenticeship committees can more easily determine the wage classification of all the apprentices for which they are responsible.

5. Training programs can be "tailor-made" to suit each apprentice.

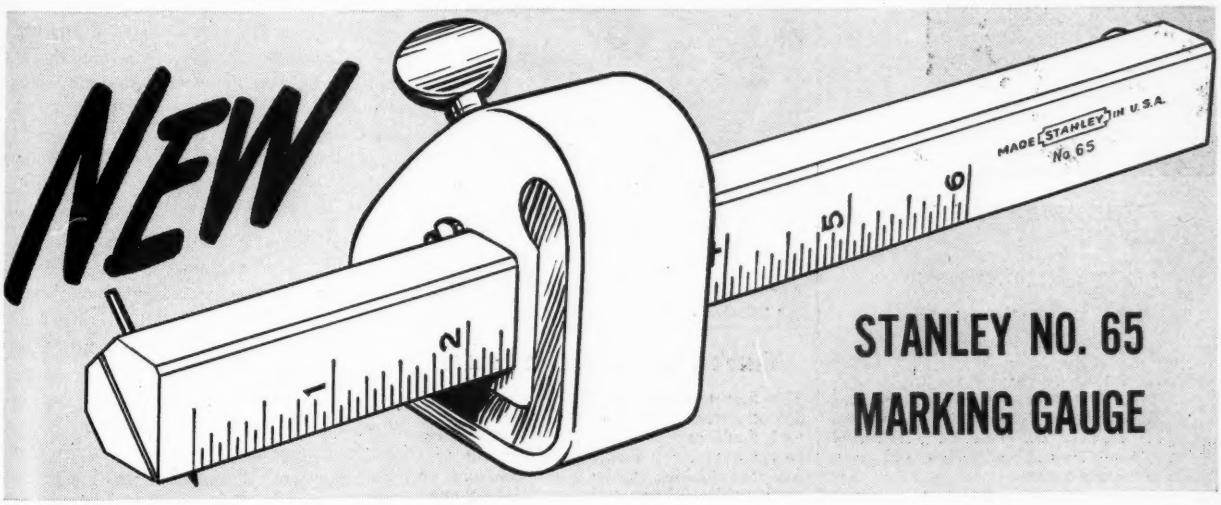
6. Apprentices can be grouped in the classroom according to the ability of each.

7. Uniform training programs can be developed in any given area, thereby coordinating all classes of similar type. If an apprentice moves from one school to another, he can continue his training from the point at which he left off in his previous class.

8. Apprentices will be mentally "readied" for their training classes. The law of readiness is a basic learning principle.

9. An unbalanced training program can be discovered by comparing self-evaluations. This discovery might require adjustments on the job as well as in the school. The trade coordinator can show an employer that his apprentice is not being rotated from job to job, that he should be given a greater variety of work.

10. Each apprentice can be intelligently measured as to his progress in mastering the trade.



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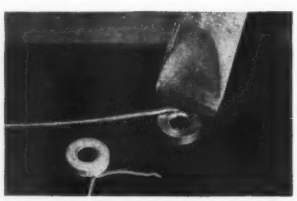

FUNDAMENTALS OF SOFT SOLDERING

by CHARLES YERKOW

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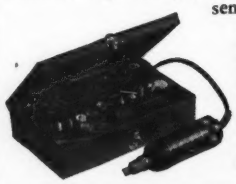

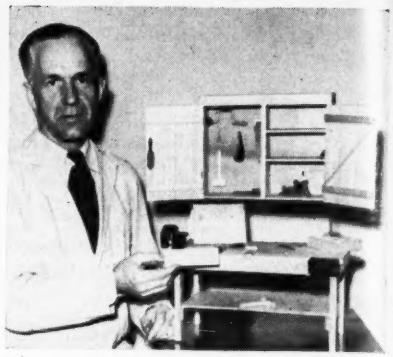

The author beside the model workbench and tool cabinet, showing tools scaled to size.

Shop Models

By Duane G. Chamberlain

Industrial-Arts Department, Michigan State Normal College, Ypsilanti

FOR assistance in in-service training of rural and elementary schoolteachers, we have developed at Michigan State Normal College, Ypsilanti, models of the basic tools and equipment necessary for industrial-arts teaching.

Compact and lightweight, the demonstration unit is easily carried to various centers. The quarter-size model consists of a bench, tool cabinet, and the common hand tools needed for industrial-arts activities in the average one- or two-room school in rural areas. The miniature tools included are sufficient for servicing activities in wood, metal, concrete, electrical work, weaving, drawing, tool maintenance, and related activities.

Although we developed the model to demonstrate an industrial-arts "corner" or "center" for rural and elementary schools, the miniature set is proving a valuable aid in the development of home workshops at the secondary-school level. The bench, cabinet, and tools are well suited to the needs of the young home mechanic and craftsman.

As a demonstration model, the unit is used to show both teachers and home craftsmen details of bench and cabinet construction. Convenient and serviceable methods of arranging and hanging tools are easily demonstrated with the small tools, most of which are working models.

The small tools are also well adapted to tool identification tests in the industrial-arts classes.

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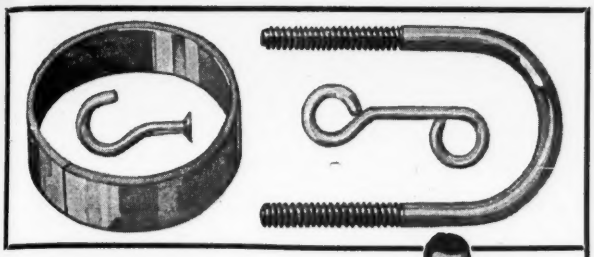

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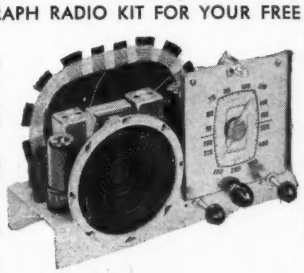

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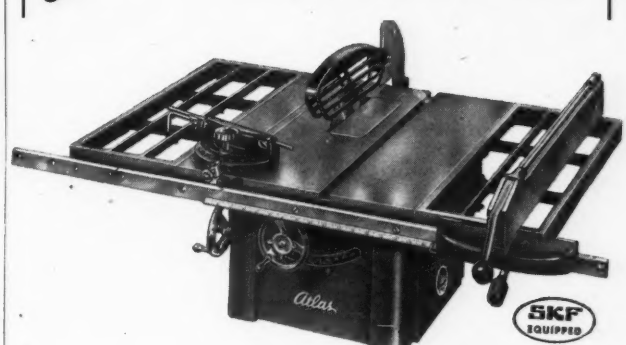

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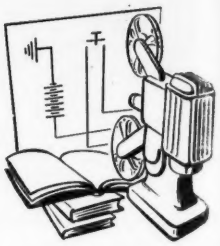

Books:

Principles and Practices of Vocational Education. Mays. New York: McGraw-Hill Book Co., Inc., 1948. Pp. viii + 303. $3.50.

The purpose of this volume is to present to those interested in vocational education the major principles which underly the program. It is designed as a text for use in teacher-training courses and should be of interest to those aiming at school administration as well as to prospective teachers of vocational subjects. The first third of the book covers the development of the field and relates it to the social and economic pattern of America. Methodology is then treated in a general way as are the various vocational subjects. There is a chapter on the relationship of practical-arts education to vocational education; another on guidance; one on vocational education of college grade; and others on teacher preparation, organization and administration, and the program of vocational education. Questions and problems and a bibliography at the end of each chapter are learning aids. The book is of particular value because of the way in which the author has covered vocational education from the social, cultural, and economic viewpoint.

Arthur B. Mays is Professor of Vocational Education at the University of Illinois, Urbana.

Your Home and How to Build It Yourself. Leckey, Editor. Chicago: Popular Mechanics Press, 1947. $3.00.

This is an unusual narrative. It tells how an inexperienced but handy man built his own home with the aid of an inexperienced helper. He did all the work with the exception of plumbing, wiring, plastering, and such other jobs as excavation and pouring the foundation which naturally would require additional help. Complete plans and specifications are given as well as material lists and operational guides. Teachers of carpentry and woodworking will find this volume of particular interest.

Working with Plastics. Dunham. New York: McGraw-Hill Book Co., 1948. Pp. ix + 225. $3.50.

Designed as a text to be used in courses in plastics crafts in schools, this new book aims to develop skills in handling plastic materials and to give background information on the topic. The trade-analysis approach is made to the subject. Processes and projects in both phenolic and acrylic plastics are covered at both elementary and advanced levels. Complete chapters are devoted to the topics of safety, tools, and equipment; design and color; and vocational information. A list of manufacturers, a glossary, and a bibliography are helpful adjuncts to the text. Numerous photographs and drawings add interest and understanding.

Arthur Dunham is Directing Teacher of Industrial Arts Education, Wayne University, Detroit, Mich., and Director, Craft Shop, Wyandotte, Mich.

Pamphlets:

Basic Information Concerning Apprenticeship and the Participation of the Public Schools in the Program is a publication of the California State Department of Education, Sacramento, written by George L. Rosecrans, assistant state supervisor, apprenticeship training, Bureau of Trade and Industrial Education in California. The booklet contains information concerning the philosophy, organization, and operation of the apprentice training program in the state. The role of the schools in preparing young workers for apprenticeship training and the need for a more complete school-job integration in such training is stressed.

The Cathode Ray Tube and Typical Applications is a pamphlet prepared by the Allen B. Du Mont Laboratories. It explains in non-technical language the cathode-ray tube, its history, development, theory, and operation. This highly important instrument in modern radio operation is explained in simple terms and with an abundance of graphs, diagrams, and drawings. Its increasingly wide use in television and radar makes the study of the tube very important for the shop teacher of radio. Teachers may obtain copies by writing to the Du Mont Laboratories, 1000 Main Ave., Clifton, N.J. Please mention SCHOOL SHOP.

Visuals:

Handbook for the Audio-Visual Program is a booklet prepared by AVID (Audio-Visual Instruction Directors) of Indiana. It is the history of that organization and an account of the growth and use of audi-visual technics in the state. Phases of the program in the schools of Indiana are discussed by committees composed of teachers drawn from the AVID membership. There is a bibliography and the constitution of the group is printed as an appendix. Copies of the booklet may be procured for $1.00 from the Audio-Visual Center, Indiana University, Bloomington, Indiana.

How To Make Handmade Lantern Slides is a 16mm. motion picture in color produced by the Audio-Visual Center of Indiana University, Bloomington. The running time for the film is 21 minutes, the price is $135. It emphasizes the low-cost character of lantern slides and demonstrates the many uses to which they can be put. Seven types of handmade slides are presented. The film may be purchased from the Center or dealers in educational films. Rental from film libraries.

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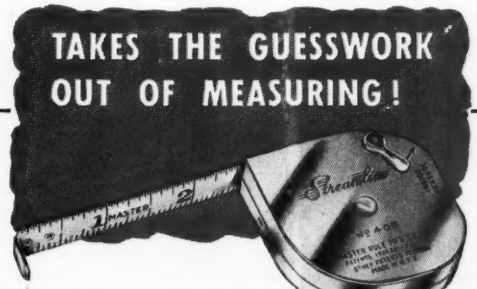

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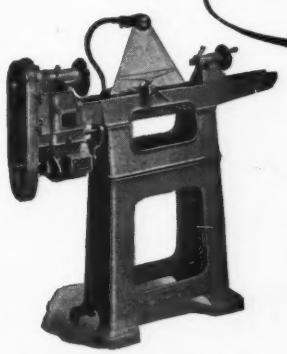

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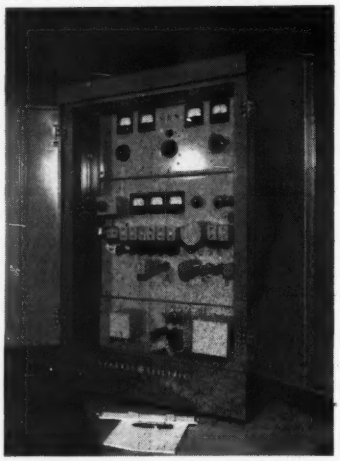
G-E 10-Watt Transmitter



A new FM broadcast transmitter, Type BT-11-B, for universities, schools, and other noncommercial educational institutions, has been designed by the Transmitter Division of General Electric Company.

The unit furnishes 10 watts of power output and operates in the 88-108 megacycle frequency range, where its signals may be received on standard FM receivers. Its coverage is from 5 to 10 miles. The transmitter consists of a basic Phasitron modulator unit and separate power supply as used in all high-powered G-E FM transmitters, plus an amplifier. It meets FCC regulations for non-commercial educational FM broadcasting with power output of 10 watts or less.

Further information on the new 10-watt transmitter is available from Dept. SS, G-E Transmitter Division, Electronics Park, Syracuse, N. Y.; *or by checking no. 32 on the coupon.*

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For complete information write to Atlas Press Co., 26031 N. Pitcher St., Kalamazoo, Mich.; *or check no. 33 on the coupon.*

New Sheldon Catalog

The new Sheldon G-48 catalog describes, illustrates, and gives detailed specifications for the first time of the new postwar Sheldon and Sheldon-Vernon machine tools, accessories, and attachments—all of the new large capacity for size, moderately priced, and extremely accurate ("Zero Precision" bearings, etc.) type, now coming into such general use.

The unique feature of the catalog is that it is so arranged that illustrations, descriptions, and detailed specifications are in every instance on the same or facing pages, obviating all need for confusing cross reference. Yet 52 types of Sheldon precision lathes and Sheldon-Vernon shapers and milling machines, with over 70 accessories and attachments, are covered. The accessories and attachments are also arranged alphabetically for quick reference. For a free copy of catalog G-48, write Sheldon Machine Co., 4258 N. Knox Ave., Chicago 41, Ill., mentioning SCHOOL SHOP; *or check no. 34 on the coupon.*

New Literature

Catalog No. 48 (Cutters). A woodworking tool catalog of Ekstrom, Carlson & Company, this is pocketsize and contains pertinent information for woodworkers. There are descriptions of the standard bits, cutters, knives, etc., in the company's line. Illustrations and specifications for the firm's woodworking machinery are also given. Copies may be obtained by writing to Ekstrom, Carlson & Co., Dept. SS, 1400 Railroad Ave., Rockford, Ill.; *or check no. 35 on the coupon.*

Boice-Crane 12" x 4" Thickness Planer. A new brochure describes and illustrates in detail the features of this power tool. A copy will be sent free by addressing requests to Boice-Crane Co., 938 Central Ave., Toledo 6, Ohio, mentioning SCHOOL SHOP; *or by checking no. 36 on the coupon.*

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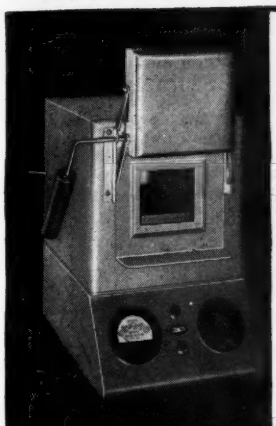

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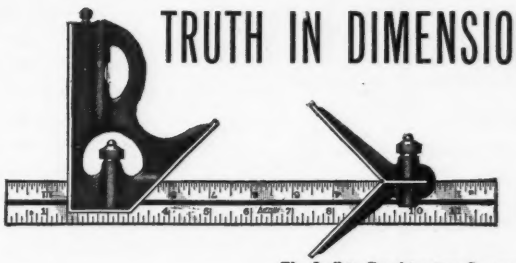

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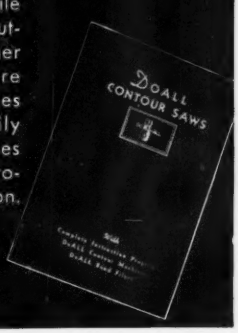

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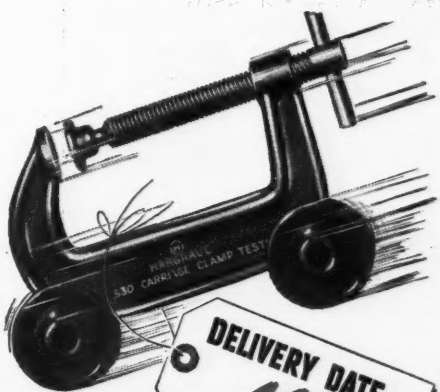

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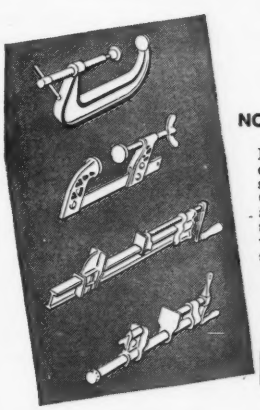

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Washington . . . *from page 24*

enter on training for work requiring manual dexterity or merely manual experience, should not impliedly relegate these people into an inferior school group, nor should the groups assigned to manual training be composed of persons of lower IQ. The social well-being of each person and his ability to function in his community for the common good should determine the training given to them."

Are these the views of a few disgruntled "resolutions writers" in the AFL? Or do they represent convictions of both leaders and the rank-and-file in organized labor? Does the complaint come from a lack of knowledge on the part of labor as to the operation of vocational education? Is a "selling job" with a few labor people all that is necessary to correct the situation? Or should the AFL suggestions be taken seriously and acted on?

Guidance, too. — At Lake Success, Paris, Beirut, and other places international bodies are drafting codes to protect the individual's right to work, marry, get an education, travel, and change jobs. It is appropriate that attention should also be given to vocational guidance.

At San Francisco this summer, the International Labor Office considered the opinions of some of its member governments on vocational guidance. Out of these opinions and discussions that followed grew a proposed Recommendation—and it is important to spell the word with a capital "R."

When adopted, the Recommendation will become a world charter for vocational guidance. Its text, as drafted at San Francisco, will be considered at the 1949 ILO Conference in Geneva this summer. If approved, as is expected, it will be sent officially to all the nations belonging to the ILO. In the case of the United States, for example, the Recommendation will be sent to the President, who in turn will submit it to Congress. Through the U. S. Labor Department, the Recommendation will also find its way to the state departments of labor and of education.

The ILO takes vocational guidance seriously. Take only this one clause.

"Public vocational guidance facilities (should) be provided to the maximum possible extent and as rapidly as possible for young persons attending or leaving school and for other young persons whether such persons are seeking admission to vocational training or are seeking employment for the first time or

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have already been employed. . . . Public employment counseling facilities (should) be provided to the maximum possible extent and as rapidly as possible for adult persons who wish to obtain advice concerning the choice of occupation."

Dr. Harry Jager, of the U. S. Office of Education, says:

"The fact that ILO is in the process of adopting a Recommendation on vocational guidance establishes the international importance of this movement for workers, employers, and government. The 59 member nations will have an authoritative statement of the nature of vocational guidance, definitions, principles, and practices. They will have, as well, asserted the right of the individual not merely to fill a job, but so far as economic conditions allow, to choose also a job which calls on his known abilities and interests and promises personal satisfaction and progress."

Milwaukee . . . *from page 7*

Education, Baltimore, was reelected treasurer.

A new constitution was adopted at the annual business meeting. The major change in organization involves the establishment of an advisory council which is to be made up of representatives of groups within the AVA such as teacher-trainers, supervisors, state groups, and others. The council will not be an executive body but will advise the executive committee of the AVA on policies and practice and is designed to provide for wider participation of the membership in AVA affairs.

The Industrial-Arts Section set up a committee to study life-adjustment education and industrial arts, the financing of state leadership under a federal-aid bill, selection of teacher candidates, and research.

The 1949 AVA convention will be held at Atlantic City, N. J., November 28-30.

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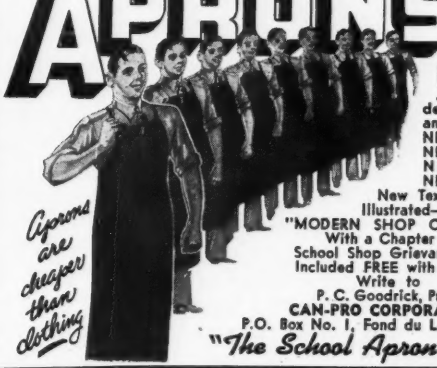

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HERE is a quick look at the legislative picture:

Big Push.—As the 81st Congress organizes for work, lobby groups are at their busiest—and no offense meant by the word "lobby." (Even Congress realizes that lobbies can be useful if they keep their pressures reasonably controlled.) Educational lobbyists are drafting bills to promote many causes—some new, some historic.

By almost tacit agreement nearly all educational groups in Washington will clear the tracks for federal aid to education. Only those who deliberately hope to block this legislation will do anything to set up booby traps in the way of this bill—and there are at least two such groups in Washington. (The remainder of this paragraph has been censored by your reporter!)

Next to federal aid to elementary and secondary schools, the immediate aim of many educators is a federal scholarship program. Higher education leaders, who see veterans' enrolments dropping in posthigh-school institutions, want a bill which will provide at least $500 to each student in the upper one-fourth of his high-school graduating class to continue his education.

After these two measures will come a deluge of other educational bills seeking to: increase social security payments to needy children; extend old age and survivors' insurance to teachers and other school workers; appropriate billions for school construction to house the oncoming children who will be flooding the schools; set up a national school health program, probably as part of a larger health insurance system; put teeth into child labor laws so as to protect children who are still employed in hazardous jobs; obtain more money for school lunches; and help struggling rural public libraries.

Of course, someone in the Pentagon will also start a new to-do for universal military training. But there is general agreement that this proposal will not be welcomed this year by a large majority in Congress.

One bill, which ordinarily would not attract schoolmen's attention, will be of some importance to education this year. This is a measure to raise the salaries of secretaries of departments, their undersecretaries, and other major officers. The Senate Civil Service Committee agreed to include in that bill a clause raising the U. S. Commissioner of Education's salary from $10,000 to $15,000. Hearings were scheduled to begin on the bill as this Letter went to press. Since J. W. Studebaker left the Commissionership of Education in June, the post has been vacant, primarily because of its unattractive salary.

Southern governors will again seek to pass their pet project—a dual system of regional technical and professional schools for Negroes and whites. But with President Truman pledged to civil rights and nonsegregation in education, the governors' proposal will have tough sledding. The regional school idea, however, will get more publicity this year.

Organized labor will push the creation of a workers' extension education bureau in the U. S. Labor Department. Because of labor's new political strength—about which more later—this suggestion may be enacted into law. However, one powerful group in Washington, the Association of Land Grant Colleges and Universities, would rather have a General Adult Education Extension Service, to serve all nonfarm adults, in the same way that the farm extension serves all farmers.

Labor in Politics.—The most interesting phenomenon in town is the suddenness with which organized labor became a great force behind the Administration and in the halls of Congress. This is due to the loyalty with which labor unions supported Mr. Truman's fight for reelection.

Labor's attitude, therefore, is being taken seriously on every issue. And this month organized labor has some things to say on vocational education.

The American Federation of Labor headquarters says that it is receiving "considerable adverse criticism reports" against the vocational education provision requiring a fixed number of hours for specialized vocational work.

"This fixed hourly requirement for 'vocational workers' forces the school to be limited severely in its academic work. All trade unionists believe the academic work to be equally as important as the vocational work for the pupil."

The AFL, therefore, would like the Federal Vocational Education Division to carry on a number of pilot projects to explore the relation between academic and practical training.

"This proposed study," the AFL says, "should lay stress on creating and maintaining nonacademic standards of achievement as well as those for academic work." The AFL also wants the U. S. Office of Education to evaluate programs of guidance and counseling.

"It should be borne in mind in connection with these pilot studies," says the AFL, "that all training is 'vocational' and that the desire of certain pupils to

(*Continued on page* 22)

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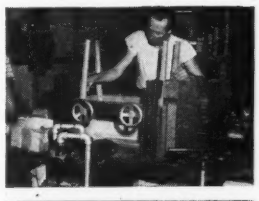

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